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DISTRIBUTION:

Active Army, USAR, and AR/VG. **To be distributed in accordance with DA Form 12-11 A, Requirements for Forward Arming and Refueling Points (FARP) (Qty rqr block no. 709).**

U.S. GOVERNMENT PRINTING OFFICE : 1994 0 - 161–021

FIELD MANUAL
NO 1-109

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC , 29 May 1987

AVIATION SELF-DEPLOYMENT PLANNING

FM 1-109

CONTENTS

PREFACE

This publication describes how aviation units containing aircraft with self-deployment capabilities execute the self-deployment process. The basis for organizations discussed in this publication is the J-series TOE. This publication is intended for use by battalion or higher level commanders and staff.

The proponents of this publication is HQ TRADOC. Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms), and forward it through the aviation unit commander to Commander, United States Army Aviation Center and Fort Rucker, ATTN: ATZQ-TDD, Fort Rucker, AL 36362-5000.

Unless otherwise stated, whenever the masculine gender is used, both men and women are included.

This publication has been reviewed for operations security considerations.

CHAPTER1

INTRODUCTION

1-1. OVERVIEW

Employment of Army forces is directly related to the United States' commitment to NATO and other alliances. It is also related to our willingness to counter threats to this nation's interests worldwide. The US will meet these employment needs using three basic deployment modes. The primary deployment mode is from CONUS to the overseas theater. The secondary deployment modes are forward deployment to the site of combat operations and deployment from forward deployment sites to another theater. The task, whether based on deployment from CONUS or from one theater to another, is for the US to develop a successful rapid deployment capability. This rapid deployment of combat unit helicopters is one of the most important aspects of the strategic deployment challenge.

1-2. RAPID DEPLOYMENT

During the buildup phase of a conflict, the ALOC will be overloaded with high priority shipments of troops, weapons, materiel, and supplies. The SEALOC, though not required to transport high priority cargo, will be heavily tasked to transport outsize and overweight cargo. Longer reaction time required by surface shipping may keep combat helicopters from meeting rapid deployment dates.

1-3. DEPLOYMENT MODES

Both ALOC and SEALOC will be used to deploy helicopters. However, these modes may not be sufficient to meet priority needs. The operations covered in this manual provide a deployment capability to fill this gap. Army helicopters—such as CH-47C/Ds, AH-64s, and UH-60s—have the ability to carry enough usable fuel to reach a deployable range. Figures 1-1,1-2, and 1-3 show extended-range fuel systems for UH-60, AH-64, and CH-47 helicopters, respectively. This capability also enhances the availability of combat unit helicopters to meet unit operational dates. (Other helicopter characteristics are shown at Table 1-1.) However, self-deployment is applicable to the deployment of aircraft only. This manual does not provide for, or address, the deployment of unit personnel or equipment.

Table 1-1. ABC helicopter characteristics

Element	AH-64	UH-60A	CH-47C	CH-47D
Empty Weight (Pounds)	10,980	10,495	21,678	22,623
Self-Deployment Equipment Weight for Maximum Range (Pounds)	1,273	2,720	2,350	2,427
Normal Internal Fuel Weight (Pounds)	2,442	2,350	6,765	6,765
Range on Normal Fuel (Nautical Miles)	360	370	350	350
Maximum Auxiliary Fuel (Pounds)	6,370	8,840	19,500	19,500
Maximum Ferry Range (Nautical Miles)	1,089	1,114	1,219	1,179
Gross Weight for Maximum Range (Pounds)	21,065	24,405	50,293	54,000
Average True Airspeed (Knots)	124	118	125	130
Mission Time (Hours)	8.5	10.3	10.6	9.8

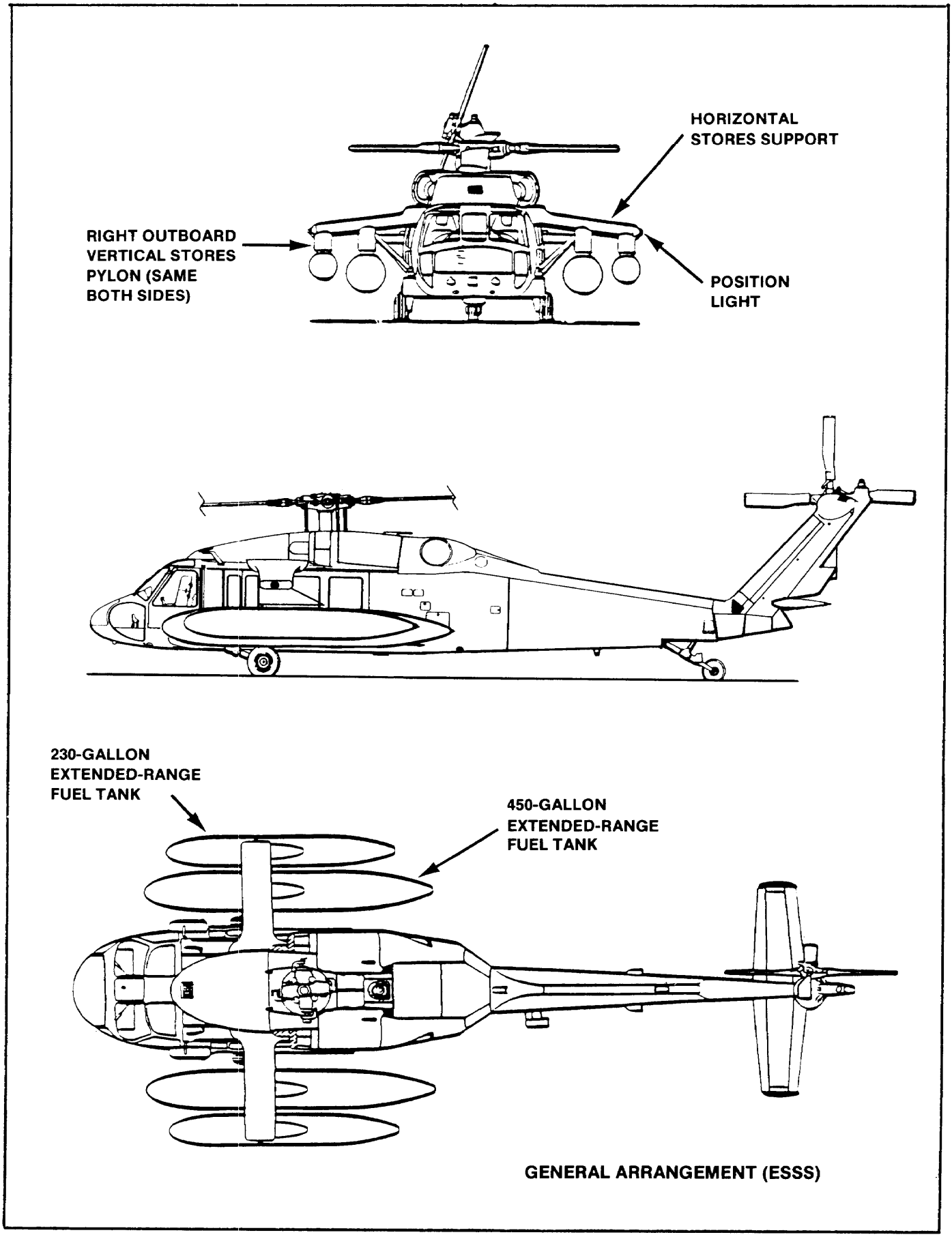


Figure 1-1. UH-60 extended-range fuel system

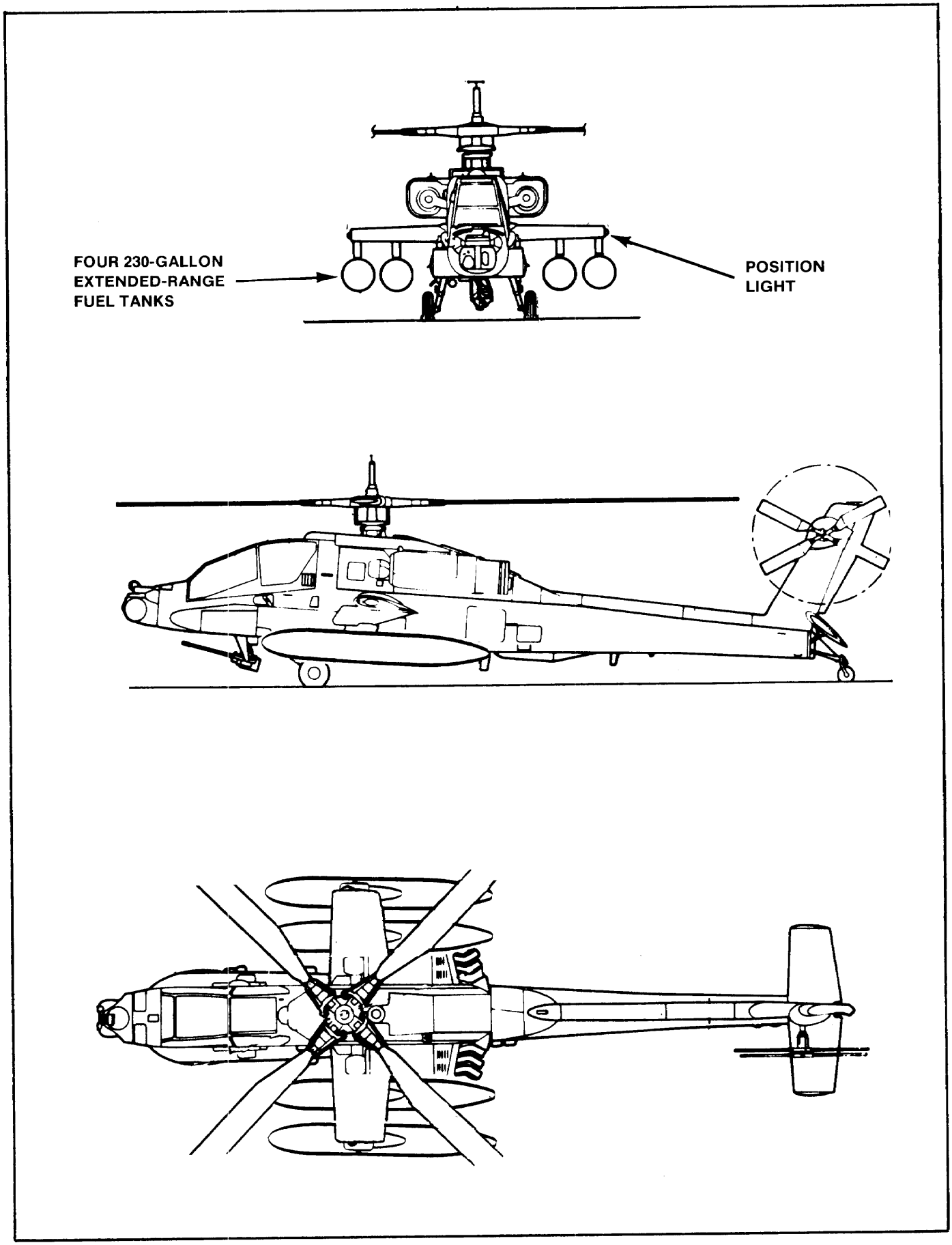


Figure 1-2. AHI-64 extended-range fuel system

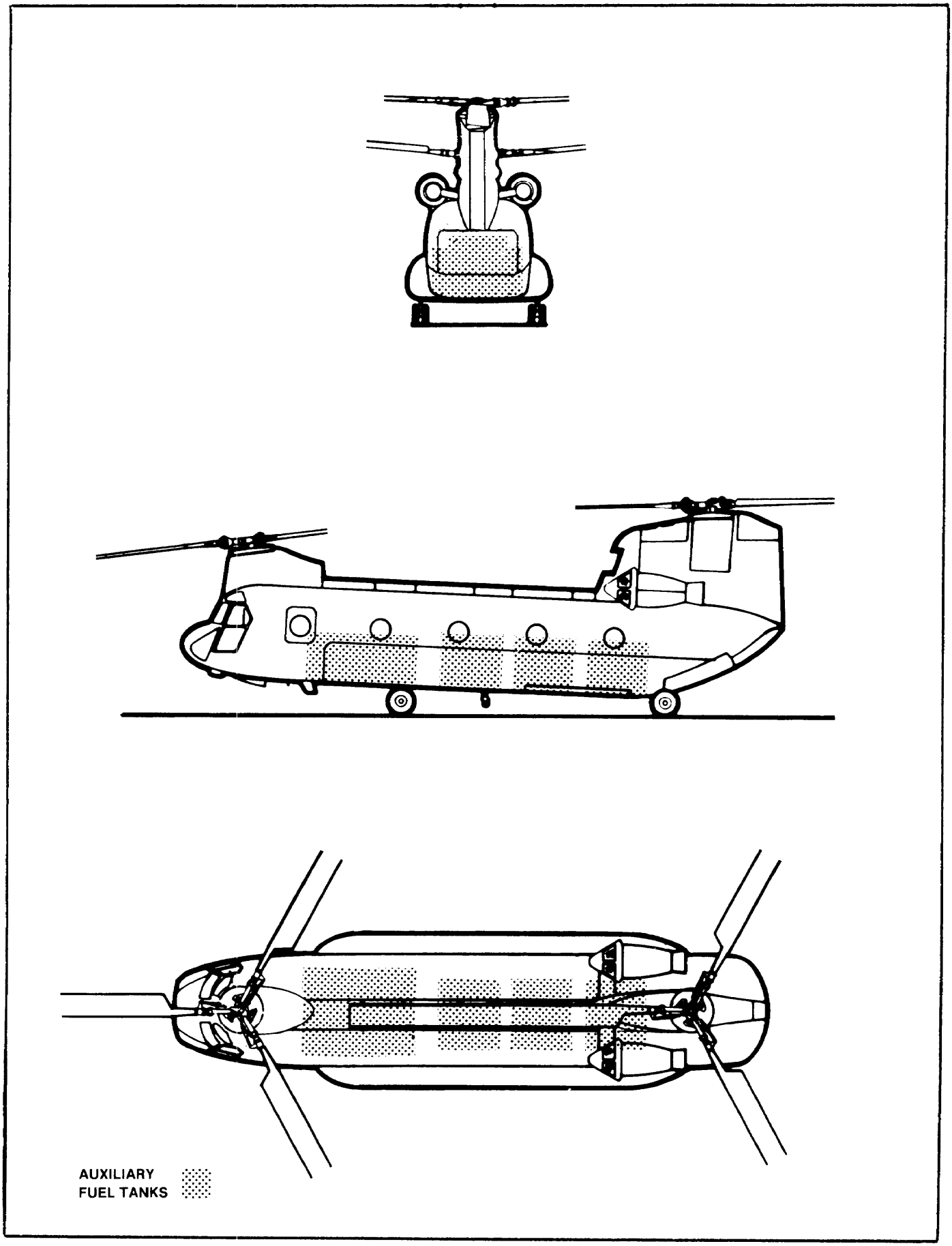


Figure 1-3. CH-47 extended-range fuel system (proposed)

CHAPTER2

SELF-DEPLOYMENT PROCESS

2-1. INITIALIZATION

The self-deployment process is designed to bring theater assets to full strength or to replace combat losses. It is executed by one of two methods—unit deployment or aircraft fills. With either method, basic procedures remain the same. Notification to self-deploy is sent to the affected units, depots or departure points, support units and personnel, and stopover and destination points. The first increment of aircraft is flown to the depot or departure point, and support teams are dispatched to the stopover points.

2-2. FUNDAMENTALS

a. When the directive to execute self-deployment operations is received, specified units in CONUS ferry their aircraft via preselected routes to CONUS departure points. The preselected routes are identified by units with a self-deployment contingency and are included in the unit's self-deployment OPLANS. Departure points are operated by units capable of performing depot level maintenance. Units arrive sequentially at depot facilities according to time-phased force deployment list priorities or as otherwise directed. As units arrive, a dedicated depot support team prepares the aircraft for self-deployment. Preparation includes required aircraft maintenance and installation of ferry equipment as shown in Table 2-1. Concurrent with these activities, the self-deployed element is integrated with its aerial support team as described in paragraph *d* below. At this point, the self-deployed element is prepared to depart CONUS.

b. Special maintenance should not be required on deploying aircraft. However, aircraft with less than 60 flying hours before the next major inspection or maintenance phase is due should not depart the CONUS depot. Except for safety-of-flight items, routine parts replacement is deferred until the aircraft land at the destination depot or terminal point.

c. The self-deployment execution directive triggers the dispatch of predesignated ground support teams to stopover points along self-deployment flight routes. Ground support teams include necessary personnel, equipment, and repair parts to provide limited services. These limited services include maintenance, POL, supply, medical, communications, weather and flight planning, and housekeeping. To expedite emplacement of the ground support teams, much of the required equipment and repair parts package may be pre-positioned at the stopover points.

d. Predesignated aerial support teams provide en route assistance and expertise to the self-deploying aircrews. These teams consist of two ferry and rescue-qualified aviators who are familiar with the proposed route (see Appendixes A, B, and C). Each team member is trained in the requirements shown in Table 2-2. The team members fly as PICS in both the lead and trail aircraft of the deploying flight. Both the lead and trail aircraft are equipped for air-sea rescue (see paragraph 6-4). Aerial support teams may be organic to a depot. They maybe comprised of active and reserve component aviators.

e. Self-deployment flights terminate at depot or AVIM facilities in the theater of operations. Personnel at these facilities must be able to remove ferry equipment, install combat mission equipment, and perform required maintenance and inspections for aircraft integration into the combat zone. These facilities must also coordinate immediate backhaul of predesignated aerial support teams and ferry equipment. Aerial support teams and ferry equipment must be shipped by high priority airlift to

Table 2-1. Equipment requirements

	Deploying Aircraft	Lead Aircraft	Rescue Aircraft
Extended-Range Fuel Systems	X	X	X
Aviation Life Support Equipment	X	X	X
Navigational Systems		X	X
Personnel Rescue Systems		X	X

Table 2-2. Training requirements

	Deploying Aircrews		Aerial Support Teams	
	Crew member	Pilots	Lead	Rescue
Sea Survival	X	X	X	X
Fuel System Management		X	X	X
High Gross Weight Operations	X	X	X	X
Route Flight Check and Procedures Qualification			X	X
ICAO Flight Planning			X	X
Navigation Equipment			X	X
High-Frequency Communications Operations			X	X
Rescue Operations	X	X	X	X

CONUS for reuse in later flights. As with support teams, personnel of these AVIM facilities are pre-selected and dispatched when the self-deployment directive is issued. Most of the required equipment is also pre-positioned similarly to that of the en route ground support equipment, To facilitate the integration of self-deploying aircraft and crews into a theater combat force structure, command facilities must exist at each terminating site.

f. When aircraft are self-deployed to destinations beyond those with fixed-base facilities (such as Southwest Asia), predesignated ground support teams must be positioned to perform the functions cited in paragraph e above. Additional en route teams are positioned to provide the required services. In lieu of en route teams, plans may be made with friendly nations to furnish ground support.

2-3. DEPOT OR DEPARTURE POINTS

At the depot or departure point, ferry equipment is installed on the aircraft and crews are joined by their aerial support teams. Crews are also briefed on the mission and issued survival gear, Aircraft then depart the depot or departure point, stopping at each stopover point for fuel, maintenance, and crew rest.

2-4. PERSONNEL REQUIREMENTS ON DEPLOYING AIRCRAFT

Aircraft deploying to Europe or Southwest Asia will cover extensive distances. Aircrews will be required to fly six- to ten-hour legs every day. To ensure that crews are physically able to fight once they arrive in the theater, an effective crew endurance policy must be established,

a. To enhance aircrew alertness during deployment and in the new theater, work and rest schedules of the aircrews should be adjusted before deployment flights. This is especially critical if a need for continuous operations is anticipated in the new theater.

b. Commanders must devise a means of rotating crews through pilot duties. CH-47s and UH-60s have cabin space for crew chiefs and extra pilots. CH-47s, which accompany AH-64s, can also carry backup attack crew members. Rest stops and crew changes should take place every two hours when flying over land. While flying over the sea in either a UH-60 or a CH-47, one crew member at a time can rotate. Use the crew endurance guide given in AR 95-1, Table 2-3, when establishing the crew endurance schedule.

c. Usually, there will not be enough pilots of a particular type aircraft to allow two crews per aircraft. Pilots of single-pilot aircraft maybe copilots on deploying flights; scout pilots from deploying attack units may serve as copilots on the escorting CH-47s or UH-60s; and UH-1 pilots are possible copilots for the UH-60s being deployed. Wartime waivers maybe required for crew substitutions. However, safety must always be the prime consideration.

2-5. DESTINATION POINTS

Upon arrival at the destination, the ferry equipment is removed from the aircraft and required maintenance is performed. Aerial support teams and the ferry equipment are returned to the depot or departure point for later flights. At this point, the self-deployment process ends as aircraft and crews are integrated into the theater of operations.

CHAPTER 3

STAFF FUNCTIONS

3-1. SELF-DEPLOYMENT OPERATIONS

As with any deployment operation, Army aviation self-deployment applies the concept of the deploying unit being assisted or "pushed out" by another unit. The "push" package consists of the aerial support teams and the stopover point support teams. Support personnel, especially aerial support teams, require training. Therefore, support responsibilities must be assigned in the OPLAN or the contingency plan. Support functions must **be** closely coordinated before implementation of the OPLAN or contingency plan.

3-2. STAFF RESPONSIBILITIES

Staff responsibilities required to ensure success of the OPLAN or contingency plan that implements the self-deployment process are discussed below.

a. Personnel (S1/G1). The S1/G1 is responsible for unit strength maintenance and personnel service support. He must ensure deploying units and support teams have the MOS- and POR-qualified personnel necessary to perform the mission. The S1\G1 supervises the safety and accident prevention program planned and implemented by the aviation safety officer. The S1/G1 also controls nondeployable personnel and implements a plan to care for dependents of deploying personnel.

b. **Intelligence (S2/G2).** The S2/G2 is responsible for self-deployment intelligence operations. He prepares the self-deployment operation's intelligence estimate. All staff officers use the intelligence estimate to determine what effect the Threat will have on their activities. The S2/G2 is responsible for intelligence preparation of the battlefield. The IPB provides detailed information about the Threat, weather, and deployment routes. The S2/G2 also provides deploying aircrews with Air Force long-range weather forecasting information. In addition, the S2/G2 provides a counterintelligence estimate. He also plans and supervises the implementation of counterintelligence measures to support the operation. This includes counterintelligence aspects of deception to support C^3CM.

c. **Operations and Plans (S3/G3).** Success or failure of the self-deployment mission hinges on planning and training the unit to either self-deploy or to provide support to a self-deploying unit. The S3\G3 prepares the OPLAN and contingency plans. These plans are implemented when the order to self-deploy aircraft or to provide support to a deploying unit is received. The S3/G3 task-organizes and trains the unit to meet the requirements of the OPLAN and contingency plans. Self-deployment crews must be identified and trained in the tasks shown in Table 2-2. Aerial and ground support teams must also be identified and trained as shown in Table 2-2. The S3/G3 of a self-deploying unit plans and conducts the deployment of the remainder of his unit with whatever strategic assets he is provided. He then plans the assembly of these two separate segments of his unit and prepares for entry into the theater of operations as a combat-ready unit. The S3/G3 of the supporting unit coordinates the deployment and redeployment of his ground support teams and their equipment. He must coordinate the redeployment of aerial support teams and equipment identified for immediate return; for example, fuel pods and navigation equipment.

d. Logistics (S4/G4). The S4/G4 of both the self-deploying unit and the supporting unit, along with their AMOS, coordinate closely to ensure all logistics requirements along the self-deployment route are met. Fuel, rations, repair parts, tools, maintenance personnel, maintenance test pilots, and maintenance facilities must also be coordinated. The S4/G4 determines what is already pre-positioned at intermediate sites and what should be deployed to the sites. The supporting unit's S4/G4 coordinates the deployment of support teams and equipment to their respective sites. The self-deploying S4\G4 must be engaged in the deployment of the remainder of his unit into the theater of operation. AMOS organize a maintenance support operation to prepare aircraft for self-deployment and to meet scheduled and unscheduled maintenance requirements along the route.

e. **Civil-Military Affairs (G5).** The G5 of the division to which the self-deploying unit is assigned assists the staffs of both the self-deploying and the supporting units. The G5 requests and coordinates host nation support at stopover points. He coordinates maintenance and crew rest facilities, fuel, and messing for stopover point teams and self-deploying aircrews. The G5 is the point of contact for all staff officers who deal with host nations.

CHAPTER 4

THREAT AND COMMAND, CONTROL, AND COMMUNICATIONS COUNTERMEASURES

4-1. THREAT

a. The overall Soviet threat to US helicopters deploying to Europe from CONUS is not extensive; however, the Soviets are making great strides to close a perceived gap in naval capabilities. Since 1981, the Soviet navy has improved SAM systems and anti-aircraft systems for point defense on surface craft. Also, in the last five years, Soviet long-range naval aviation has improved bomber capability by replacing BADGER airframes with the newer BACKFIRE bomber.

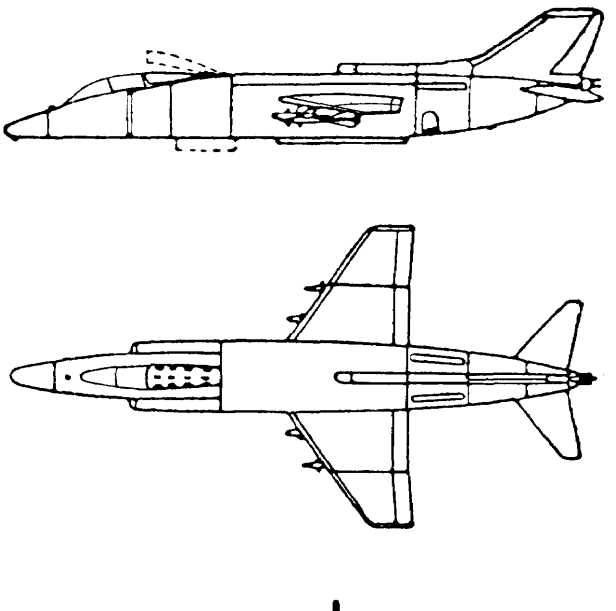
b. The Soviets have made almost no provisions for land-based, long-range naval air cover. However, forward basing of the MiG-23 and MiG-29 air superiority aircraft allows for coverage of the United Kingdom. The deployment of new types of US-style carriers with air superiority aircraft aboard will eventually compensate for the lack of Soviet land-based air cover. This is a long-term solution, The first aircraft carrier is not yet operational.

c. The Soviet sea-based naval forces in the Northern Atlantic area, including the northern and Baltic fleets, consist of about 118 major surface combat ships and 225 submarines. Intelligence sources indicate that these forces could include Kiev-class carriers that are capable of carrying VTOL aircraft\helicopters. There are four Kiev-class carriers and two Moskva-class helicopter cruisers in the Soviet navy. In addition, the Soviets are in the final development stages of an aircraft carrier that is roughly comparable to US-style carriers. This Soviet carrier's estimated displacement is 65,000 tons, and it will probably incorporate a nuclear propulsion system. The final flight deck configuration has not been confirmed; however, the Soviets have experimented with both steam catapults and angled launching ramp (ski jump) designs. At least 40 to 50 VTOL aircraft can be based on the carrier.

d. Although uncertain, aircraft deployment on the new type of carrier may include FORGER A (VTOL), FLANKER, FULCRUM, and FROGFOOT. The FLANKER, FULCRUM, and FROGFOOT have been tested on short, rolling, ramp-assisted takeoffs. Other aircraft deployment possibilities may include a mix of aircraft that have already been tested or a new airframe developed especially for carrier aviation.

e. Aircraft deployment on Kiev-class carriers consists of 12 FORGER,4 (VTOL) and approximately 15 ASW helicopters. However, a Kiev-class carrier can accommodate up to 30 aircraft.

(1) The FORGER A is a small, subsonic jet aircraft capable of reconnaissance, strikes against small ships, and shadowing unarmed maritime reconnaissance aircraft during peacetime (see Figure 4-l).



SPEED:	**Mach 1.05 at 11,000 meters (670 knots)**
RANGE:	**550 km (combat radius)**
ARMAMENT:	**Two 23-mm cannons Two AA-8 Aphid missiles**
WEAPON RANGE:	**Cannon—1,500 meters AA-8 Aphid (IR)—7 km AA-8 Aphid (radar)—15 km**
ORIGIN:	**USSR**
EMPLOYMENT:	**Fighter Interceptor**

Figure 4-1. FORGER A

(2) Weapons for the FORGER include rocket packs, gun pods, bombs, air-to-surface missiles, and air-to-air missiles which are carried on four pylons under the aircraft's inner wing panels.

(3) Target acquisition equipment includes radar ranging and infrared sensors. However, the aircraft's elementary avionics would make finding US helicopters difficult. Kiev-class carriers carry HORMONE A/B/C and HELIX helicopters. Moskva-class carriers carry 14 HORMONE or 14 HELIX helicopters.

f. Other threats from Soviet sea-based forces are on board SAM systems and AAA systems used for point defense of various ships. These systems include the SA-N-1, SA-N-3, SA-N-4, SA-N-6, SA-N-7, and SA-NX-9 as well as 30-millimeter Gating antiaircraft guns and twin 76.2-millimeter and l30-millimeter dual-purpose guns. Although formidable, these systems pose only a minor threat because of the low probability of encountering US helicopters.

g. The final threat to self-deploying helicopters is the destruction of' stopover points by either Soviet long-range naval aviation or Spetsnaz/naval infantry.

(1) Soviet naval aviation has approximately 375 BADGER, BLINDER, and BACKFIRE bombers armed with air-to-surface missiles. These bombers are dedicated to interdiction of US naval forces and sea lines of' communication. To counter this threat, the US maintains tactical fighter aircraft in Iceland and deploys AWACS aircraft on a rotational basis in this area. This AWACS coverage will allow interceptors in both Iceland and the United Kingdom to engage the Soviet bombers. Early warning from AWACS will also increase the effectiveness of F-14s based on carriers in the Atlantic.

(2) In each Soviet fleet there is at least one brigade of' Soviet naval infantry and one Spetsnaz brigade. The SNI is highly mechanized. [t is equipped with T-72, T-54 / 55 and PT-76 tanks, BTR-60 APCS, BM-21 MRLs, 122-millimeter SP howitzers, and ZSU-23-4 and SA-9 air defense assets. SNI could be used as a heavy raiding force against stopover points. Spetsnaz teams could be employed in sabotage operations at stopover airfields. Spetsnaz teams can be deployed by parachute, submarine, or fast attack craft.

h. Presently, the Soviet threat to US helicopters deploying to Europe is slight. Tracking down US helicopters is not a priority mission for the Soviet navy, so in-flight contact will probably be incidental. However, interdiction of US sea and air lines of communication is a stated mission, and the Soviets are building a multifaceted naval force that is capable of accomplishing that mission.

i. Another threat to helicopter self-deployment is Soviet client states in the Caribbean Sea and Central America.

(1) Cuba is the most important threat consideration. Recently, massive Soviet military aid has enabled Cuba to play an important role in the region. The Cuban air force has received MiG-27 and MiG-23 fighters. The MiG-23's radius of 520 nautical miles allows coverage of most of Florida, the eastern half of the Yucatan Peninsula, and Puerto Rico. Cuba has Mi-8 and Mi-17 HIP helicopters; Cuban pilots have been trained on the Mi-24/25 HIND airframe; and Cuban air defense forces operate SA-2, SA-3, and SA-6 SAMs. Cuba can also be a forward deployment base for Soviet naval aviation and surface combatants. In addition, Soviet naval infantry could operate along with Cuban naval infantry against stopover airfields in Central and South America.

(2) Nicaraguan military forces threaten deployment routes through Central America. In recent years, Nicaragua has received large amounts of Soviet and Cuban aid. Major threats to US helicopters include Mi-24/25 HIND and Mi-8 HIP helicopters and S-60 57-millimeter AAA guns, If MiG-21s are deployed to Nicaragua, their 280 nautical mile radius will cover most of Honduras and El Salvador, all of Costa Rica, and part of Panama.

j. Helicopters deploying through Germany to NATO's southern flank or to Egypt would face a myriad of threats.

(1) The threat in Central Europe is well known. The combined air forces and armies of the Soviet Union, Poland, and Czechoslovakia will work to interdict NATO air lines of communication and airfields. The neutral airspace of Austria and Switzerland will force deployment through France to Italy.

(2) Deployments to Italy, Greece, and Turkey will face Soviet, Hungarian, Bulgarian, and Romanian air and ground forces. Also, the Soviet Black Sea fleet will be a powerful force in the eastern Mediterranean Sea.

(3) In addition to previously mentioned threats, US helicopters deploying to Egypt will encounter Libyan armed forces. The Libyan air force is equipped with MiG-23s and French-built Mirage F1-A, F1-C, and IIIE fighters. The Libyan air force's inventory also includes Mi-8 HIP and Allouette II and III helicopters. Libyan army air defenses consist of the Swedish L/70 40-millimeter antiaircraft gun, Soviet 57-millimeter antiaircraft gun, and ZSU-23/4. SAMs include SA-2, SA-3, SA-6, SA-7, and CROTALE (French) surface-to-air missiles.

4-2. COMMAND, CONTROL, AND COMMUNICATIONS COUNTERMEASURES

a. Because of the Threat, the use of C^3CM plays a major role in the success of any self-deployment operation. According to AR 525-20, C^3CM is the

integrated use of operations security, military deception, jamming, and physical destruction supported by intelligence. C^3CM denies the Threat information and influences, degrades, or destroys its C^3 capabilities. C^3CM also protects friendly C^3 from Threat counter C^3. Knowing the critical nodes and links in friendly and Threat C^3 systems in a self-deployment operation is essential in planning and executing friendly C^3CM.

b. Command, control, and communications countermeasures consist of two major components—C^3 protection and counter C^3.

(1) Command, control, and communications protection is defensive measures that safeguard friendly forces' C^3 capabilities against actual or potential Threat counter C^3.

(2) Counter command, control, and communications are offensive measures that deny the Threat the ability to command and control its forces effectively.

c. In a self-deployment operation, both C^3 protection and counter C^3 play equally important roles.

(1) Command, control, and communications protection centers on OPSEC measures that protect against inadvertent disclosure of deployment routes, stopover points, and other critical nodes of self-deployment. These measures deny the Threat commander information about US capabilities and intentions. As a result, the Threat commander's attempt at counter C^3 is degraded.

(2) Counter command, control, and communications measures must center on deceiving Threat C^3 capabilities. These measures help deny the Threat commander information about the critical nodes of the self-deployment operation. US forces must use deception operations to conceal the location of stopover points. Deceptive operations degrade the combat effectiveness of the Threat's limited assets. Deception should also be a part of the aerial support teams' route qualification training.

LOGISTICS

5-1. EQUIPMENT REQUIREMENTS AND INSTALLATION

Equipment required for self-deployment is maintained and installed at depot level (see Table 2-l). Aircraft must be initially deployed to the depot to be prepared for self-deployment.

a. Depot personnel install extended-range fuel systems on all aircraft and issue aircrews the ALSE needed for extended overwater flights. Aircraft flown by aerial support teams have navigation and rescue systems installed.

b. One of two navigation systems is available—the OMEGA or the PINS. Because of the number of components involved, the OMEGA system requires more installation time. The OMEGA will probably be the primary navigation system used on UH-60 and AH-64 aircraft. However, PINS requires little installation time because of its self-contained nature. The PINS does not rely on any outside signal; therefore, it is the least susceptible of the two to Threat countermeasures. If available, the PINS will be used on CH-47D aircraft. To provide backup navigation should the OMEGA be jammed, a PINS-equipped CH-47 will accompany deploying AH-64 and UH-60 units, whenever possible. As it becomes available, the GPS will replace both the PINS and the OMEGA.

c. The rescue system installed on UH-60 aircraft is a standard rescue hoist. The rescue system on the CH-47D is a modified hoist that is operated out of the right forward cabin door, To provide search and rescue support, one or more CH-47s or UH-60s will accompany deploying AH-64s.

5-2. STOPOVER POINT REQUIREMENTS

Stopover points are operated by supporting aviation units that are “pushing out” self-deploying aviation units. Pushing units should know how, who, and what they will deploy to each stopover point. Therefore, OPLANS must be carefully formulated and well coordinated.

a. Stopover teams deploy to each stopover point using Air Force or civilian air transport. In some cases, stopover teams self-deploy to the stopover point. The stopover teams’ aircraft become spares for deploying units whose aircraft have major mechanical problems. In other instances, US Navy vessels, such as, amphibious assault ships, might be used as en route stopover points (see Chapter 7).

b. As often as possible, equipment, tools, **and** repair parts are pre-positioned according to applicable contingency plans. Abundant jet fuel must be accessible at each stopover. If 80 percent of its organic aircraft are deployable, each AH-64 and UH-60 unit needs about 20,000 gallons of fuel at each stopover. CH-47 units deploying 75 percent of their organic aircraft will need about 50,000 gallons of fuel at each stopover. Multiplying these quantities by several units makes it clear that fuel delivery must be planned well in advance.

c. It may be necessary to request that the host nation provide the required fuel support, even if the stopover is on an Air Force base. Host nations may also be able to provide rations, rest facilities, and weather forecasting information for both the deploying units and for the stopover teams. When non-aligned nations provide support or when a sensitive mission is performed, backup military support must be arranged. Accurate, long-range weather forecasting is another necessity at every stopover point.

d. Stopover teams will be task-organized to perform refueling, normal scheduled maintenance, minor unscheduled maintenance, and technical inspections. Maximum use of deferred maintenance and “circle x“ will be employed. Major unscheduled maintenance requires that necessary support personnel, parts, and tools be transported to the stopover point.

5-3. DESTINATION ARRIVAL PROCEDURES

Upon arrival at the destination point, self-deploying aircraft are reconfigured for combat. High-cost special equipment, such as long-range fuel tanks and navigation systems, is removed and returned to CONUS for later use.

a. To ensure rapid entry of aircraft into the combat zone, the destination team must be configured to perform both scheduled and unscheduled maintenance. The destination point will be manned by either the CONUS unit supporting the self-deploying

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unit or by an AVIM unit that is already in the theater. To avoid using Air Force airlift assets to deploy or redeploy the destination team, it is preferred to use an AVIM unit already in the theater.

b. The self-deploying unit must have command and control elements at the destination point. These command and control elements ensure that aircraft and crews are rapidly returned to the unit for entry into the CZ.

5-4. ALSE REQUIREMENTS

Available self-deployment routes will require extended overwater flight. These flights will require additional ALSE equipment other than the aviator's normal flight clothing and the SRU-21/P survival vest. To facilitate rescue, each SRU-21/P must be fully equipped and modified with an integral lifting harness.

a. Each aviator will be issued either an LPU-2/P or an LPU-10/P life preserver assembly. Each aircraft will be equipped with the appropriate number of individual overwater survival kits. Depending on the type of aircraft, space may be available for additional life raft assemblies. These assemblies could include the LRU-4/P or the LRU-lG/P one-man assembly, the MA-1 four-man assembly, the E-2B six-man assembly, and the LRU-I/P seven-man assembly.

b. Depending on the selected route and weather condition, each crew member will be issued cold weather flight clothing. Regulations require that the CWU-21/P exposure suit (constant wear or equivalent) be worn anytime the water temperature is 60 degrees Fahrenheit or colder. Upon arrival at the destination, items that were issued specifically for the self-deployment mission will be returned to the depot for use by follow-on self-deploying aircrews.

CHAPTER 6

TRAINING

6-1. LONG-RANGE FLIGHTS

Both the self-deploying aircrews and the aerial support teams must train for long-range flight with extended-range fuel systems. Long-range training flights should include operating the aircraft at high gross weights, if possible. Flight should include hands-on training with the extended-range fuel system that is to be installed on the type aircraft being flown. In the absence of hands-on training with the actual fuel system, extensive classtime will be required to train ah-crews. Training flights should be conducted under both day and night conditions.

6-2. ROUTE FLIGHT CHECK AND PROCEDURES QUALIFICATION

Route flight check and procedures qualification, including ICAO flight planning, are required of aerial support teams only. Because this training is required for aerial support teams only, units with a self-deployment mission must identify who will provide the aerial support teams to lead their self-deploying flights. To instill confidence in their ability to perform the mission, the aerial support teams and the deploying unit aircrews should conduct joint long-range training flights. Both the self-deploying unit's and the supporting unit's higher headquarters must ensure that coordination and joint training take place.

6-3. SPECIAL EQUIPMENT

As shown in Table 2-2, the aerial support teams will require training using special equipment. Special equipment includes navigation equipment; high-frequency communication equipment; personnel rescue systems, such as the personnel locator system; and depending on its availability and the type of aircraft being flown, the OMEGA, the PINS, or the GPS. Each of these systems is a linchpin in a self-deployment operation, especially if problems are encountered en route. Mission success depends on the aerial support teams' proficiency in using special equipment. To increase the aerial support teams' proficiency and to build the self-deploying aircrews confidence in the aerial support teams' ability, joint training flights are essential.

6-4. SAR OPERATIONS

Only two aircraft in each flight are equipped to perform rescue operations. These aircraft are the lead aircraft and the trail/rescue aircraft. Aerial support teams fly both the lead aircraft and the trail/rescue aircraft and must be trained using rescue hoists installed in the aircraft. Joint SAR training between self-deploying aircrews and aerial support teams is a must. Joint training ensures that procedures are established for personnel pickup and that standardization is achieved between self-deploying units and aerial support teams. Proficiency in SAR operations develops cohesion between the self-deploying unit and the aerial support teams.

6-5. ALSE AND WATER SURVIVAL

ALSE and water survival training is mandatory for both self-deploying aircrews and for aerial support teams. ALSE training can be achieved through a unit training program. Success of this training program will depend largely on the unit's ability to obtain equipment and facilities. Water survival training, including ditching and egressing, may also be achieved through a unit training program. The number of qualified trainers and adequate facilities will determine the extent of the unit's training program. Gaps in unit training programs may be filled by training the trainers or by training the individual aircrew members in water survival courses presented by sister services. However, reliance on sister-services training requires early designation of self-deploying aircrews and aerial support teams.

6-6. STOPOVER POINT GROUND SUPPORT TEAMS

Personnel assigned to stopover point ground support teams perform tasks normally associated with their career management field and skill level. Therefore, there is little requirement for special training of these personnel. However, maintenance personnel who are quialified to perform unscheduled maintenance on self-deployment equipment that is peculiar to each aircraft must be available. This type of equipment includes extended-range fuel systems, navigation equipment, and communications equipment.

CHAPTER 7

CARRIER OPERATIONS

7-1. AIR-CAPABLE VESSELS

The Threat, or possibly the final destination, may make the use of self-deployment routes shown in Appendixes A, B, and C infeasible. In such cases, air-capable US Navy vessels, such as amphibious assault ships, may be used as en route stopover points. This chapter provides general guidelines for Army aviation units involved in naval operations.

7-2. OPERATIONS ON AIR-CAPABLE SHIPS

The following general rules will apply when planning for operations on ACSs:

a. When operational requirements dictate, day VMC shipboard operations may be conducted by deck-qualified US Army pilots on US Navy air-capable ships that have been waivered for such operations.

b. When operational requirements dictate, night shipboard operations may be conducted by night-qualified US Army pilots on multispot, air-capable ships that have been waivered for such operations.

c. Except for life-threatening emergencies, night shipboard operations may not be conducted with US Army helicopters on US Navy single- and dual-spot, air-capable ships.

7-3. DECK-LANDING QUALIFICATION TRAINING

Before DLQ training is conducted, units will ensure that their aircrews meet the prescribed prerequisites.

a. Pilots will meet the following prerequisites:

- Be a designated pilot-in-command with 50 PIC hours.
- Have 500 total helicopter hours.
- Have 50 night and 50 instrument hours (actual or simulated). Five night and five instrument hours must have been within the last 60 days (night DLQ only).

b. In addition to those prerequisites listed in paragraph ***a*** above, Army DLQ instructors will meet the following prerequisites:

- Be instructor pilot qualified.
- Have 500 pilot hours in the type of aircraft in which qualified.
- Be current instrument qualified.

7-4. INITIAL QUALIFICATION, REQUALIFICATION, AND CURRENCY REQUIREMENTS

Based on the type of AL'S upon which operations will be conducted, initial qualification, requalification, and currency requirements will meet the guidelines listed below.

a. Qualification requirements for operations from multispot, air-capable ships (LPH/LHA) are as follows:

(1) For initial and requalification requirements—

- A DLQ instructor will conduct the training.
- Five day and five night shipboard landings will be made per year.

(2) For currency requirements–

- Two day and three night shipboard landings will be made per year.
- One day landing will be made within **24** hours before conducting a night landing.

b. Qualification requirements for operations from single- and dual-spot, air-capable ships are as follows:

(1) For initial qualification–

- A DLQ instructor will conduct the training.
- Ten day field landings and six day shipboard landings will be made within a two-day period.

(2) For requalification—

- Pilots whose currency has lapsed within the last six months will be trained by a deck-qualified mission commander. Pilots will also make ten day field landings and six day shipboard landings within a two-day period.
- For those pilots whose currency has lapsed six months or more, currency requirements are the same as those for initial qualification.

(3) For currency requirements, four day shipboard landings will be conducted within 90 days.

c. Night helicopter operations from USN single-spot, air-capable ships require more training than day helicopter operations, Therefore, night helicopter operations will be handled on an exception basis.

7-5. SHIPBOARD OPERATIONS

Once operational planning and deck-landing qualification and requalification has taken place, the unit may proceed with shipboard operations. If the air-capable ship is an amphibious assault ship, these operations will be conducted as outlined below.

a. The aviator's first contact with the amphibious assault ship will be through the HDC. In the pilot's initial report, he gives the aircraft's call sign, position, altitude, fuel state, and the number of souls on board (see Figure 7-l). When the pilot has visual contact with the amphibious assault ship, HDC then tells him to contact PRI-FLY. In the pilot's initial contact with PRI-FLY, he gives the same report he gave to HDC on initial contact.

b. PRI-FLY instructs the pilot to execute one of three maneuvers as shown in Figure 7-2. These maneuvers are Starboard Delta, **a** racetrack pattern flown at 300 feet on the starboard side; Overhead Delta, a racetrack pattern flown at 1,000 feet directly overhead; or Port Charlie, a landing pattern flown at 300 feet and at an airspeed of '80 knots. If the aircraft is cleared into Starboard Delta or Overhead Delta, the pilot is instructed when to make the break into the Port Charlie landing pattern. The pilot must contact PRI-FLY as he crosses the bow of the ship (Figure 7-3) and makes the break into the Port Charlie landing pattern (Figure 7-2).

c. The pilot makes his next report when his aircraft is abeam the ship. After the pilot makes this report, he receives the command, "Expect clearance to land." Upon receipt of clearance to land, the pilot takes all instructions which follow from the LSE. The LSE directs the pilot to land on one of the landing spots. A landing spot is a large "L" with a bisecting stripe at a 45-degree angle (see Figure 7-4). Helicopters are centered on the upper part of the "L."

INITIAL CONTACT WITH THE HELICOPTER DIRECTION CENTER

1. CALL SIGN
2. POSITION (distance and bearing from the ship)
3. ALTITUDE (CHERUBS/ANGELS)
4. FUEL STATE (hours and minutes)
5. SOULS ON BOARD

NOTE: Pilots shall report a "see you" when visual contact with the ship is gained VMC.

INITIAL CONTACT WITH PRIMARY FLIGHT CONTROL (PRI-FLY)

1. CALL SIGN
2. POSITION (VFR relative position)
3. ALTITUDE (CHERUBS/ANGELS)
4. FUEL STATE
5. SOULS ON BOARD

TRAFFIC PATTERN WITH PRI-FLY

1. AT THE BREAK
2. ABEAM FOR LANDING PLUS LEFT OR RIGHT SEAT APPROACH (Left seat approaches not authorized to LHA spot #2 and/or immediately behind tail rotor aircraft.)
3. WAVE-OFF (A wave-off is mandatory whenever a wave-off signal is given by the LSE or pilot loses sight of LSE on approach.)

PRIOR TO LAUNCH WITH PRI-FLY

1. CALL SIGN
2. SPOT NUMBER
3. FUEL STATE*
4. SOULS ON BOARD*

*Prior to initial takeoff and/or any subsequent change in passenger load/fuel endurance.

Figure 7-1. Radio call requirements

7-6. STOPOVER POINT OPERATIONS

At this point, the crew proceeds with stopover point operations. The following safety procedures must be observed while on board the aircraft:

- Personnel will not approach or depart from a helicopter while its rotors are being engaged or disengaged.
- Helicopters will not be deck-taxied on the flight deck.
- Helicopters will not be towed or pushed while rotors are engaged.
- Helicopters will not be launched or recovered and rotors will not be engaged or disengaged while the ship is in a turn.
- Helicopters will not be flown over other decked aircraft.
- Only spots that afford visual reference to the deck will be used for night helicopter launches.
- Personnel required in the area of operating helicopters will exercise extreme caution and observe the signals and directions of the LSE or combat cargo representative.

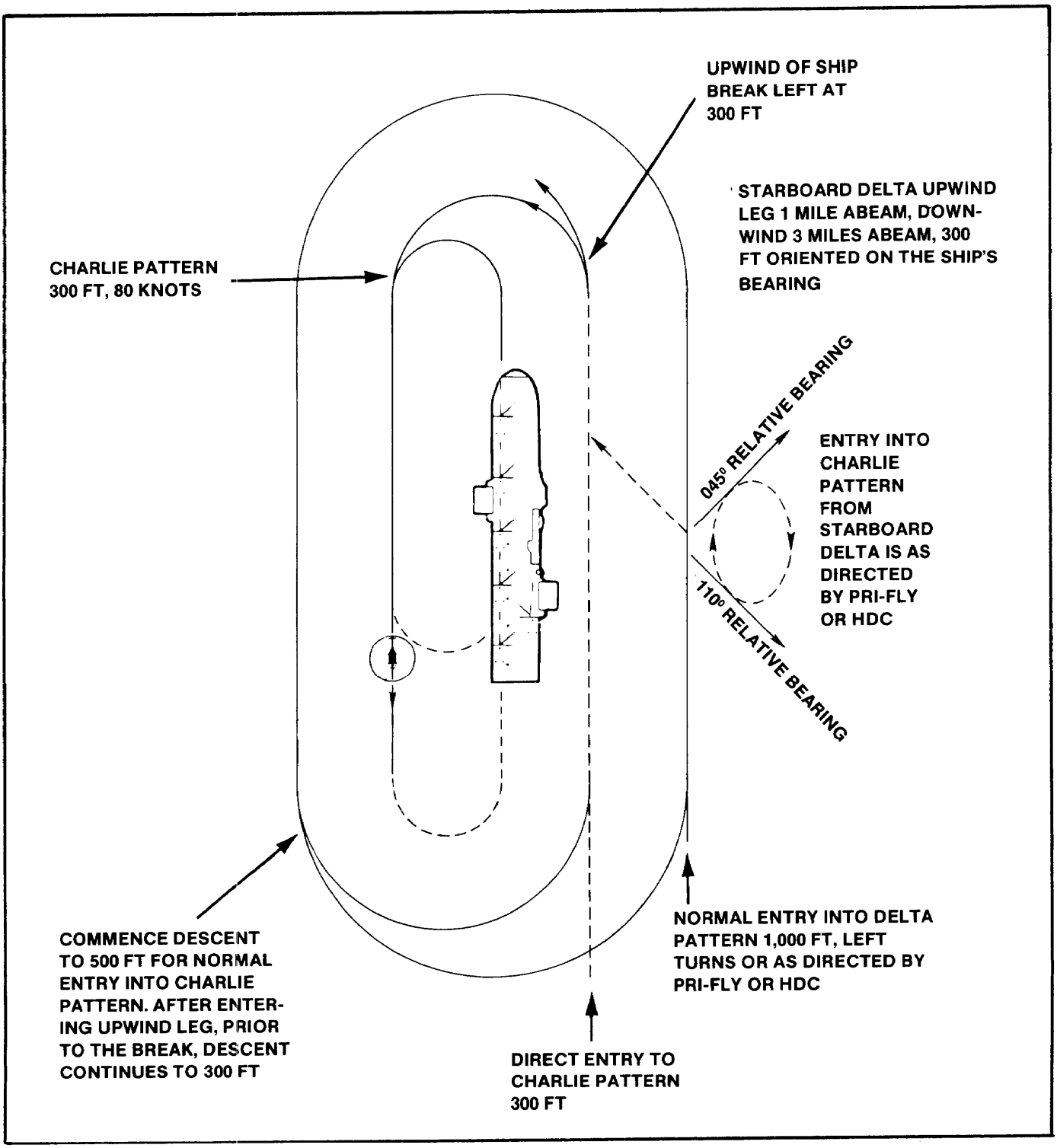

Figure 7-2. Delta and Charlie patterns for helicopters

- Dual engine helicopters will not be intentionally hovered single engine over a deck spot. If topping checks cannot be performed in contact with the deck, they must be performed at an appropriate altitude in flight.
- All personnel on the flight deck during flight operations will wear helmets, eye protection devices, and flotation equipment.
- Maintenance on and preflight of any part of an aircraft which extends beyond the edge of ship's deck is prohibited.
- Helmets and flotation equipment will be worn when a crew member climbs on the aircraft to perform preflight or maintenance.
- All personnel will observe mandatory signals, such as WAVE-OFF or HOLD.

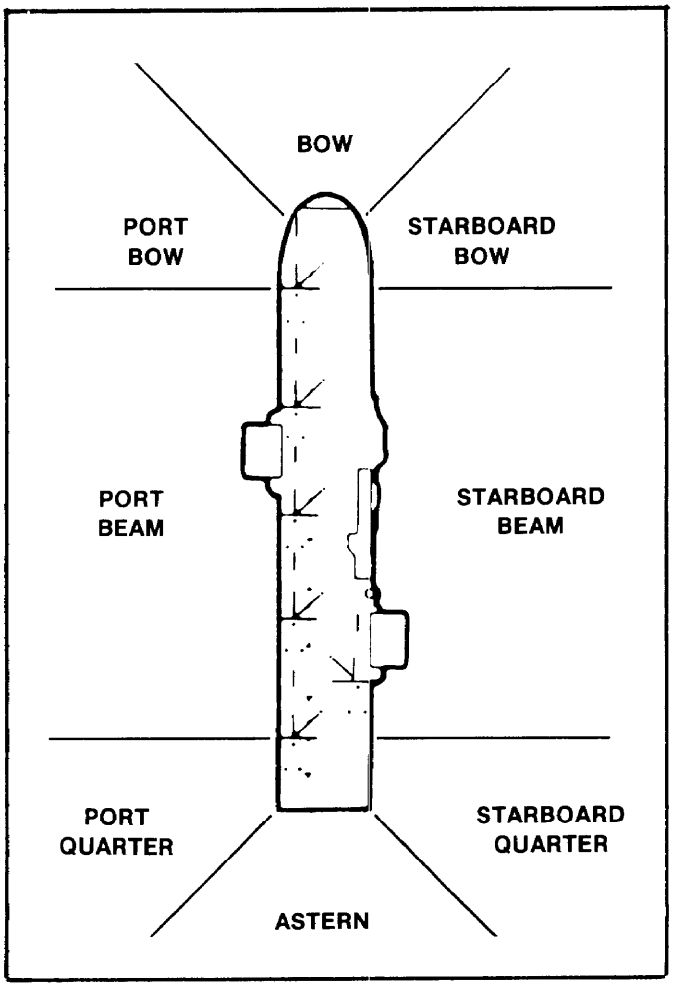

Figure 7-3. VFR relative position reporting

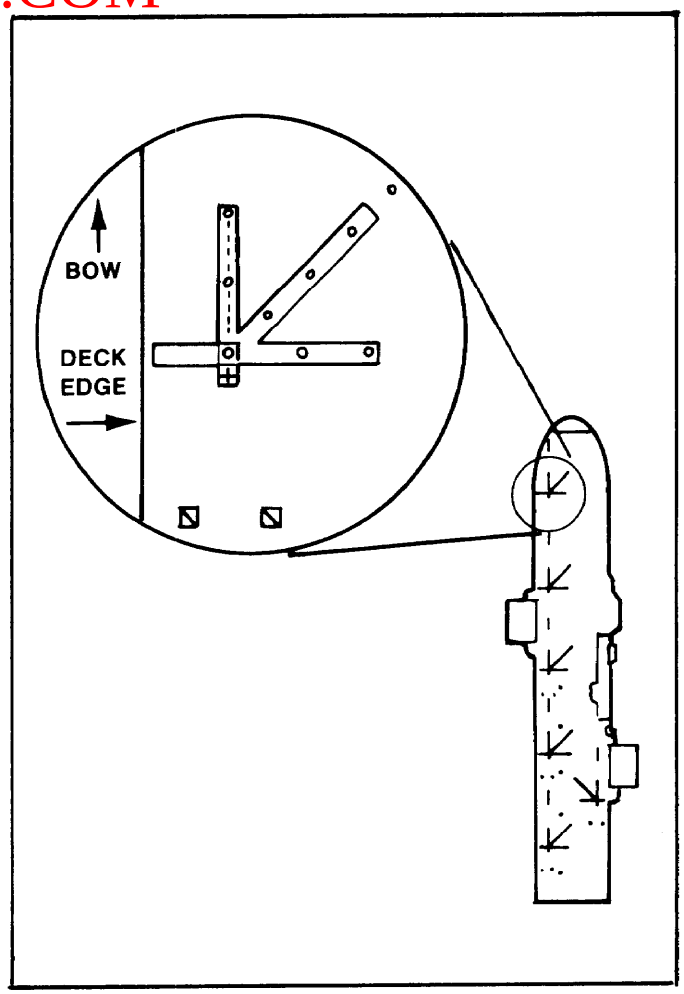

Figure 7-4. Landing spot

EUROPEAN DEPLOYMENT ROUTES

A-1. PRIMARY ROUTE

Azores route—depots to Pease AFB, New Hampshire; St. John's, Newfoundland; Lajes Air Base, Azores; France; and FRG. (See Figure A-l.)

A-2. FIRST ALTERNATE ROUTE

North Atlantic route--depots to Pease AFB, New Hampshire, or Loring AFB, Maine; Goose Bay, Labrador; Narssarssuaq, Greenland; Keflavik, Iceland; England; and FRG. (See Figure A-2.)

A-3. SECOND ALTERNATE ROUTE

Caribbean route–depots to Homestead AFB, Florida; San Juan, Puerto Rico; British and French Guiana; Brazil; Ascension Island (South Atlantic); Liberia; Morocco; Spain; and FRG. (See Figure A-3.)

NOTE: The above routes are for genera] planning guidance. Additional stopover points, land or sea based, may be required due to aircraft type and configuration.

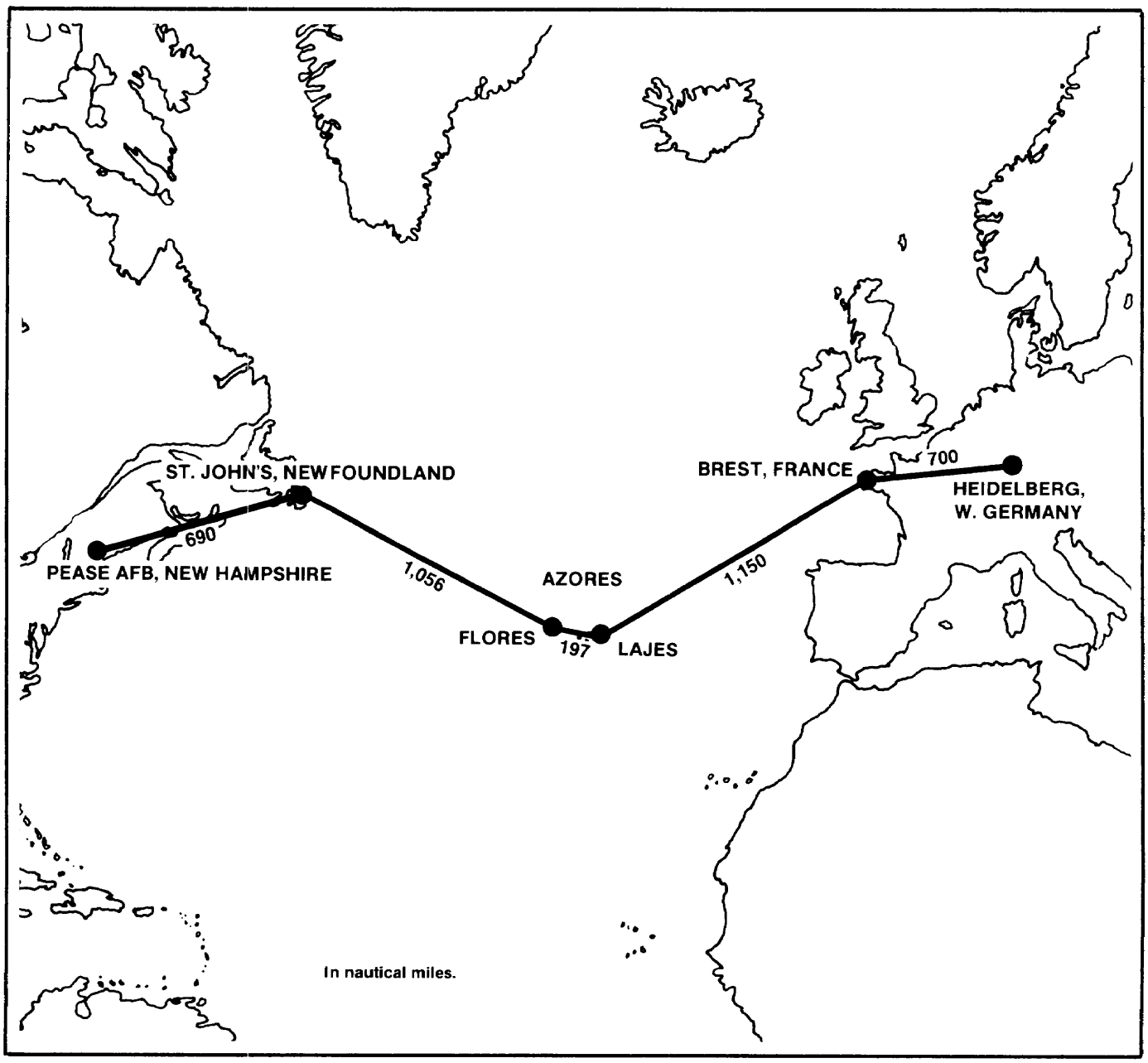

Figure A-1. European primary deployment route

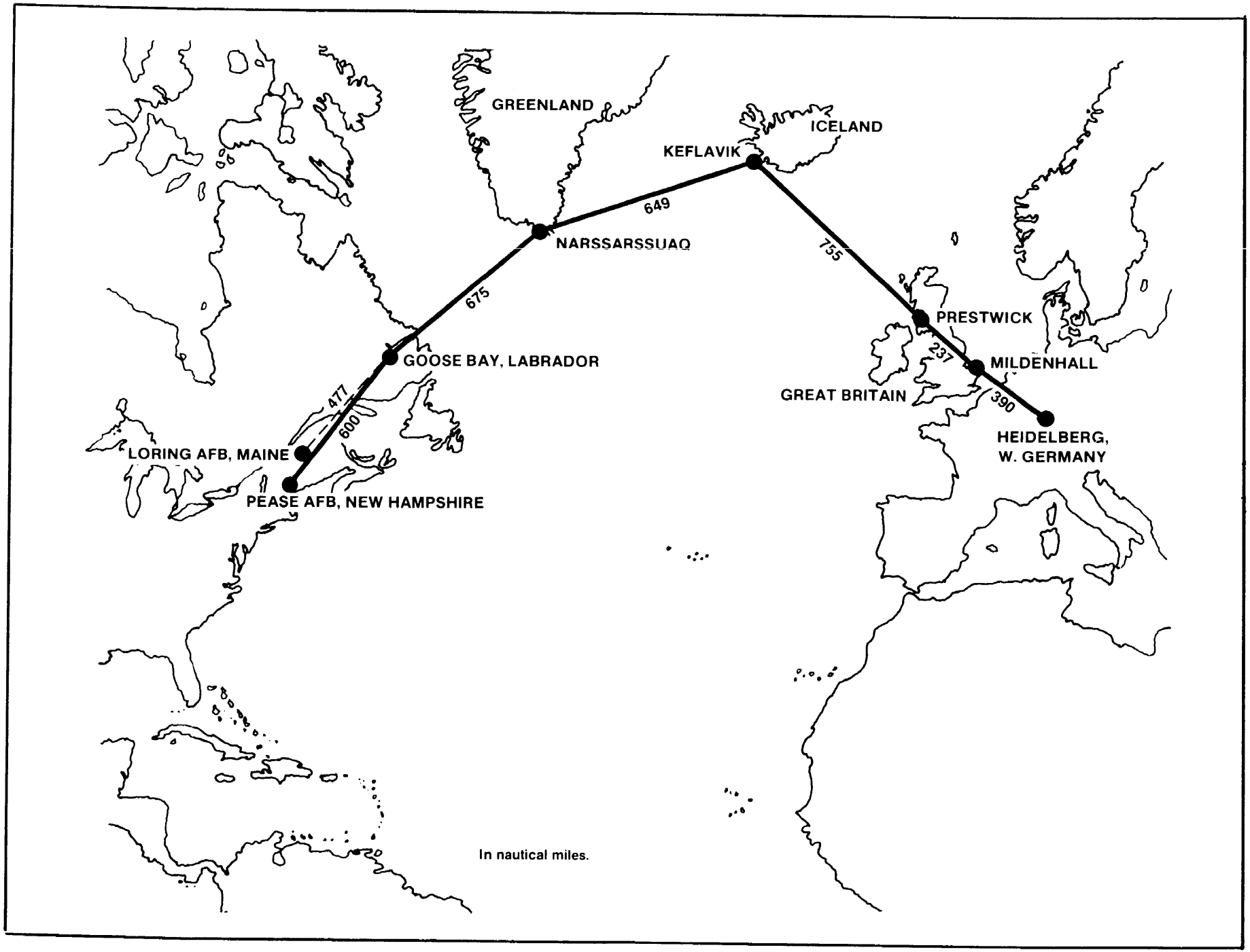

Figure A-2. European first alternate deployment route

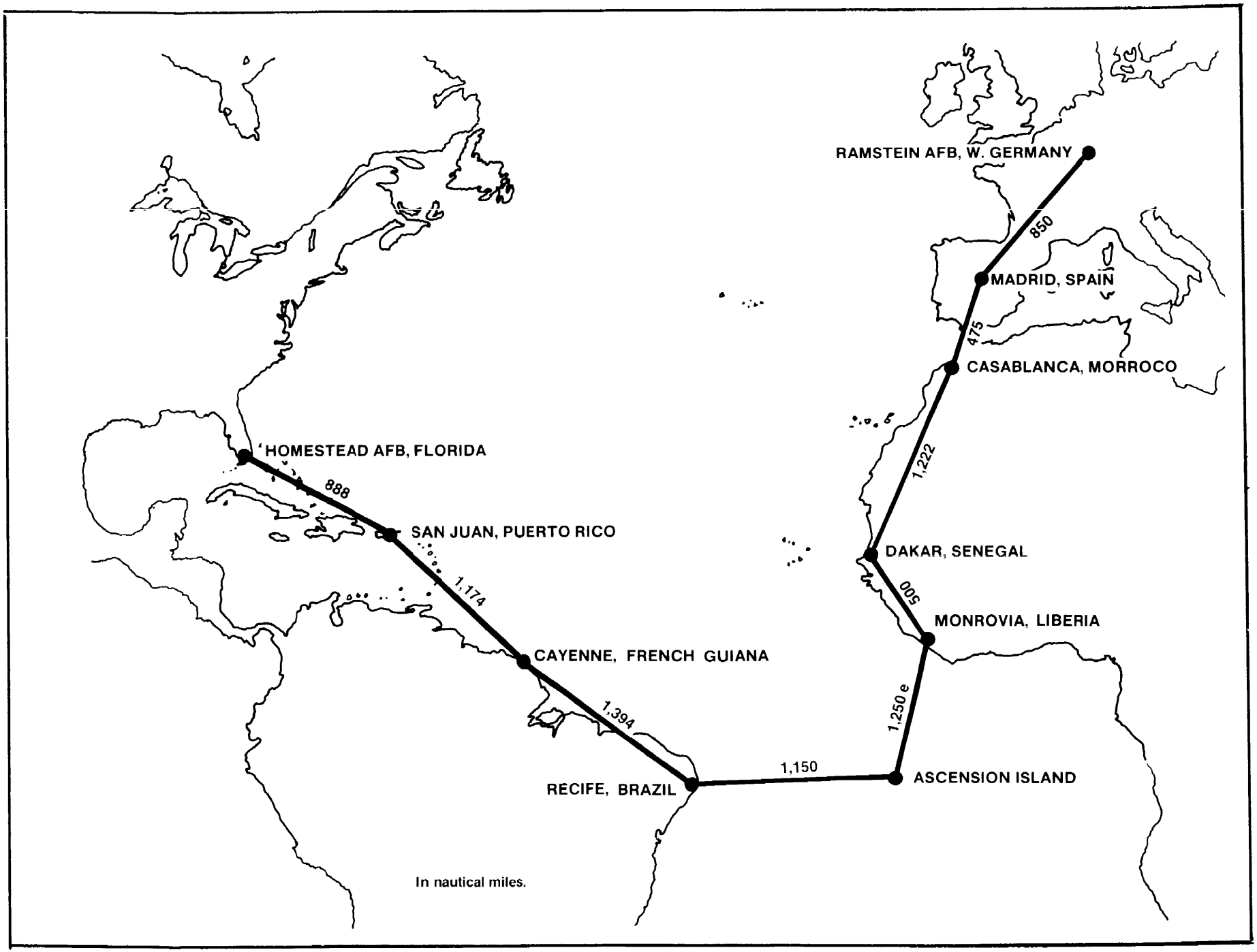

Figure A-3. European second alternate deployment route

APPENDIX B

AFRICAN DEPLOYMENT ROUTES

B-1. PRIMARY ROUTE

Azores route—depots to Pease AFB, New Hampshire; St. John's, Newfoundland; Lajes Air Base, Azores; France; and FRG. (See Figure B-l.)

B-2. ALTERNATE ROUTE

Caribbean route–depots to Homestead AFB, Florida; San Juan, Puerto Rico; British and French Guiana; Brazil; Ascension Island (South Atlantic); Liberia; and Morocco. (See Figure B-2.)

NOTE 1. The above routes are for general planning guidance. Additional stopover points, land or sea based, may be required due to aircraft type and configuration.

NOTE 2. Stateside, the self-deploying unit's G3/S3 actually plans the routes into the appropriate area from FRG to the African continent. The Federal Republic of Germany serves as the staging area for further deployment into the African continent.

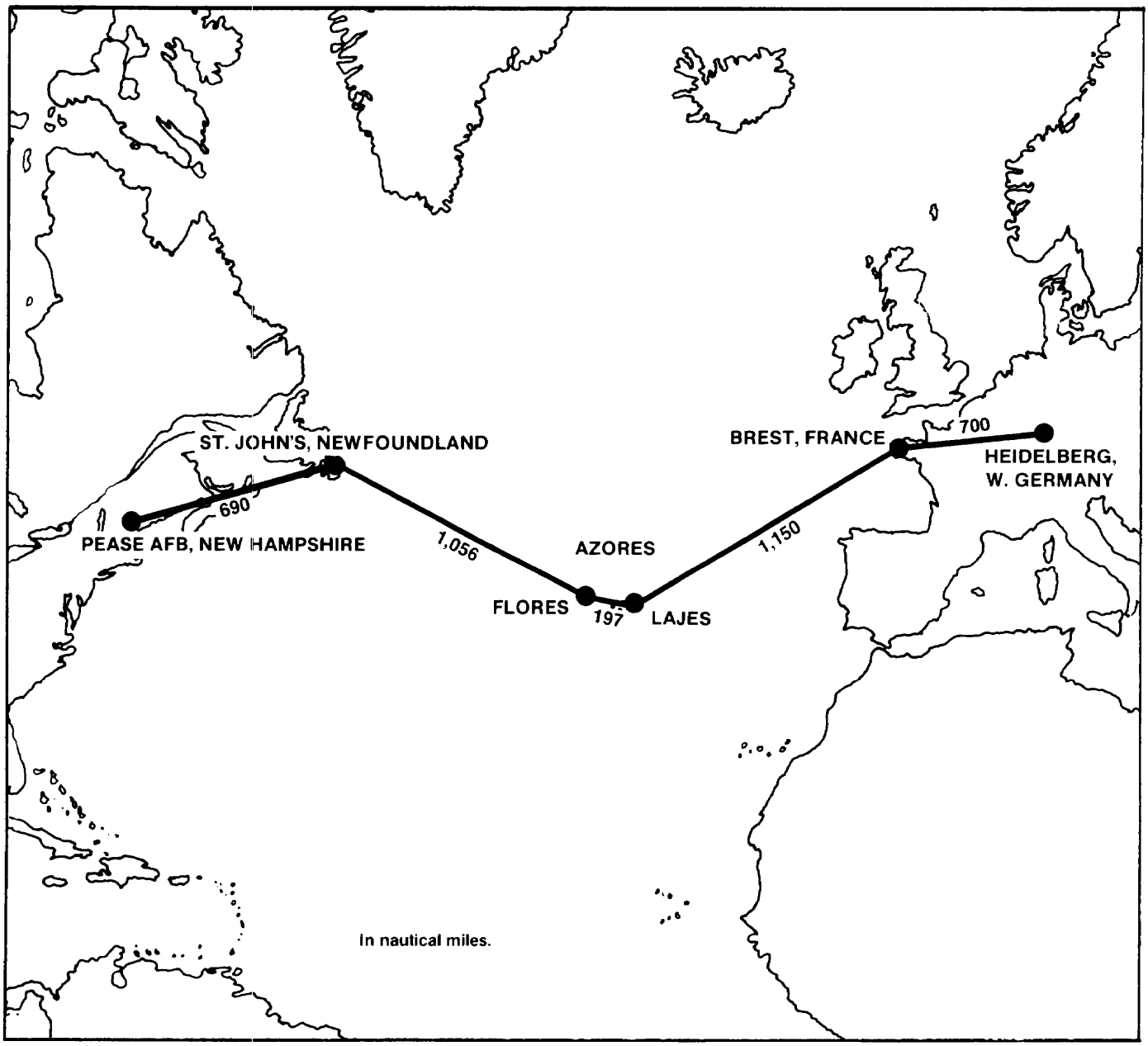

Figure B-1. African primary deployment route

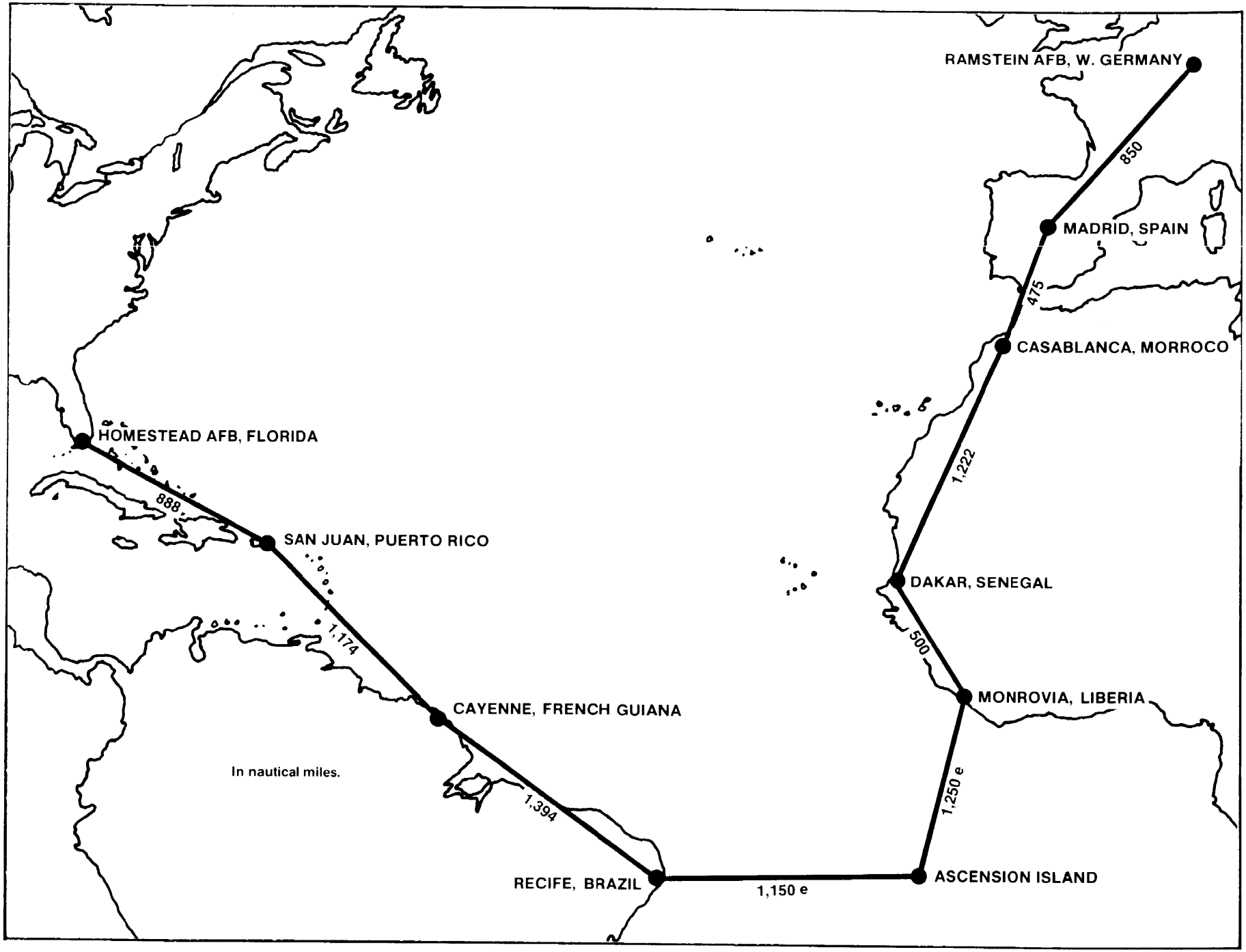

Figure B-2. African alternate deployment route

APPENDIX C

LATIN/SOUTH AMERICAN DEPLOYMENT ROUTES

C-1, PRIMARY ROUTE

Caribbean route–depots to Homestead AFB, Florida; San Juan, Puerto Rico; British and French Guiana; and Brazil. (See Figure C-l.)

C-2. ALTERNATE ROUTE

Central American route-Corpus Christi, Texas; Villahermosa, Mexico: Howard Air Fore'e Base, Panama; Venezuela; and Brazil. (See Figure C-2.)

NOTE: The above routes are for general planning guidance. Additional stopover points, land or sea based, may be required due to aircraft type and configuration.

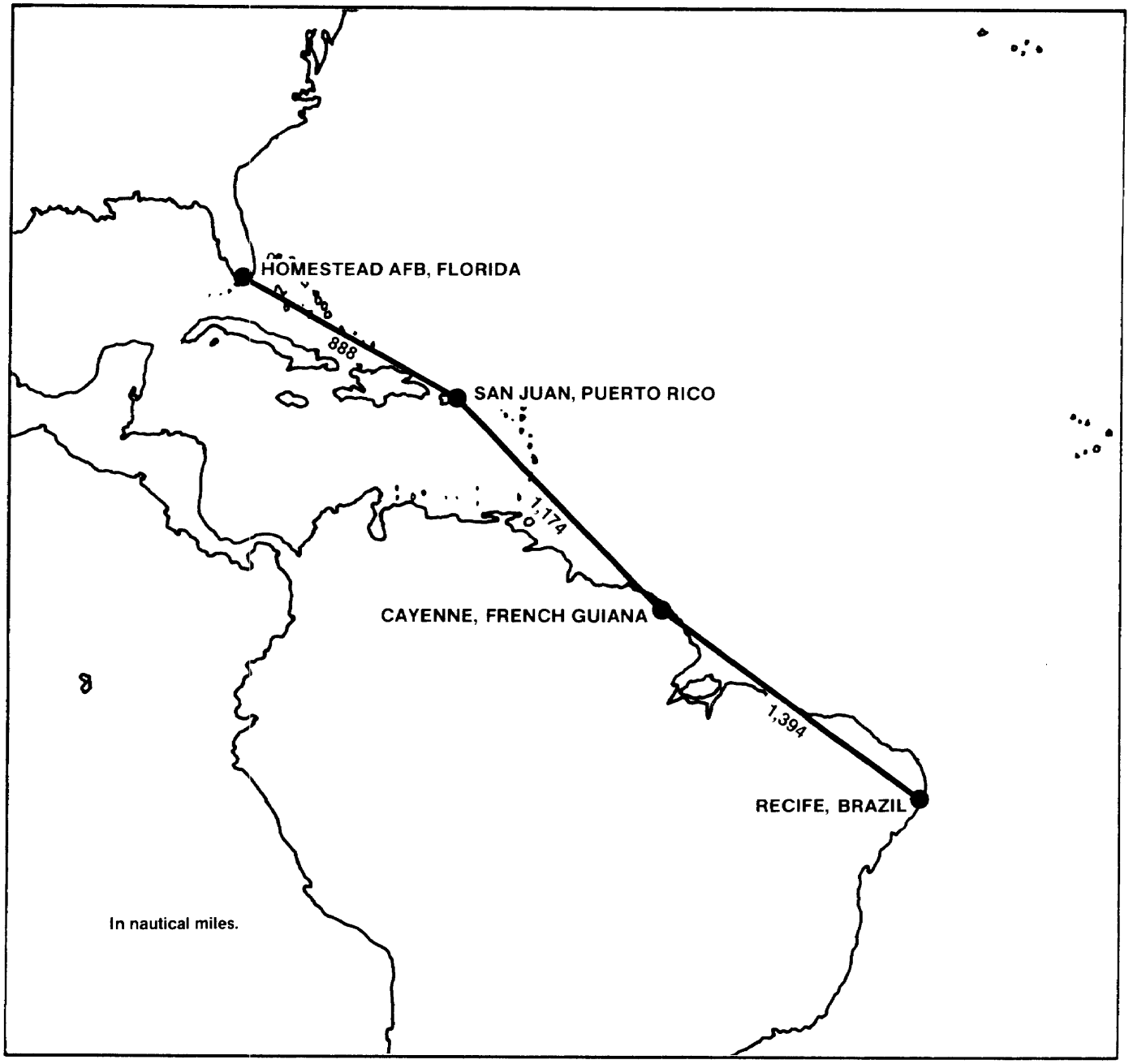

Figure C-1. Latin/South American *primary deployment route*

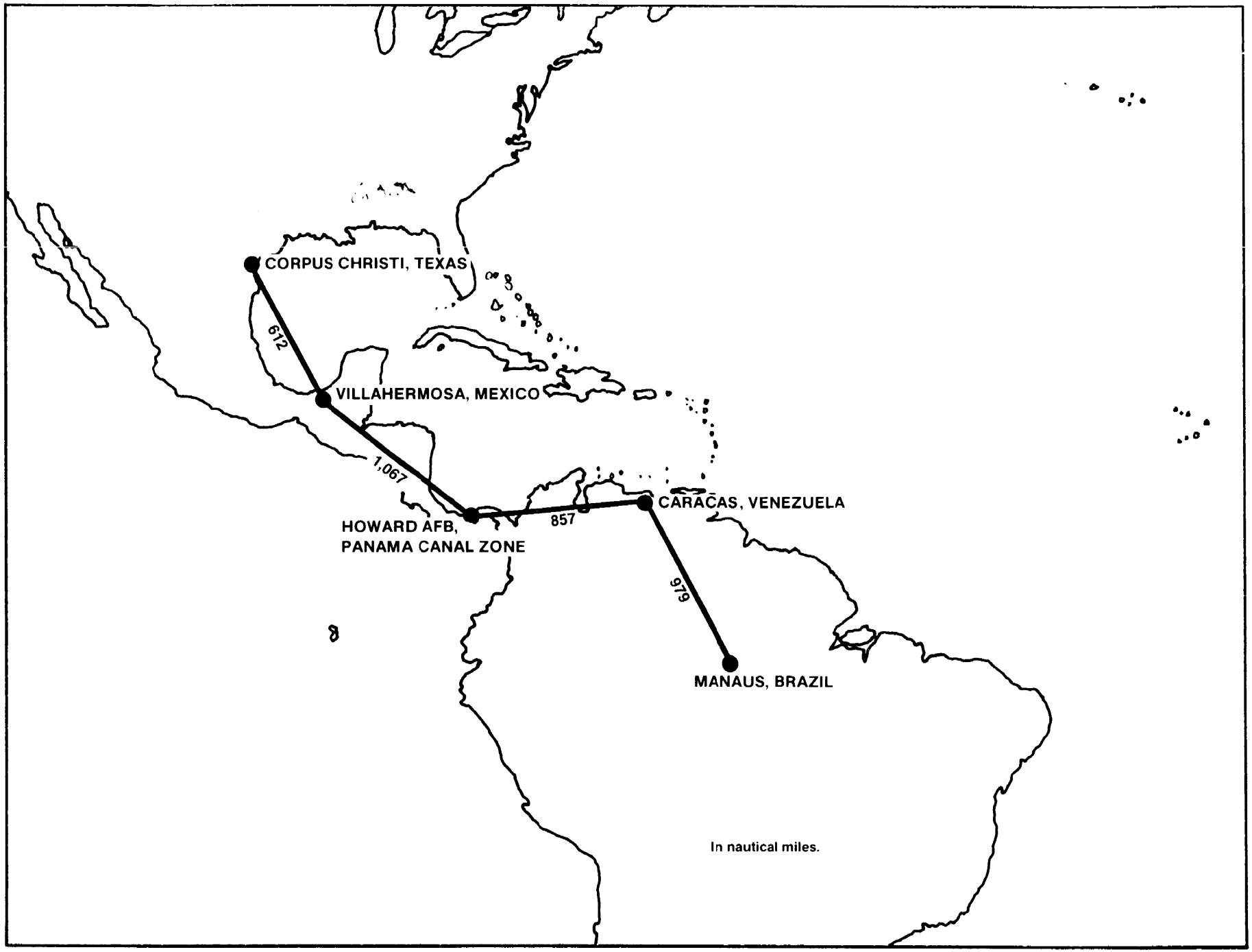

Figure C-2. Latin/South American alternate deployment route

GLOSSARY

ACRONYMS AND ABBREVIATIONS

AA	air to air
AAA	antiaircraft artillery
ABC	attack, Black Hawk, Chinook
ACS	air-capable ship
AFB	air force base
AH	attack helicopter
ALOC	air line of communications
ALSE	aviation life support equipment
AMO	aviation maintenance officer
APC	armored personnel carrier
AR	Army regulation
ASW	antisubmarine warfare
attn	attention
AVIM	aviation intermediate maintenance
AWACS	airborne warning and control system
C^3	command, control, and' communications
C^3CM	command, control, and communications countermeasure
CAS	close air support
CH	cargo helicopter
CONUS	Continental United States
CZ	combat zone
DA	Department of the Army
DLQ	deck-landing qualification
e	estimated
ESSS	external store support system
FM	field manual
FRG	Federal Republic of Germany
ft	feet
gal	gallon
G1	Assistant Chief of Staff, G1 (Personnel)
G2	Assistant Chief of Staff, G2 (Intelligence)
G3	Assistant Chief of Staff, G3 (Operations and Plans)
G4	Assistant Chief of Staff, G4 (Logistics)
G5	Assistant Chief of Staff, G5 (Civil Affairs)
GPS	global positioning system
HDC	helicopter direction center
HTF	how to fight
HQ	headquarters
ICAO	International Civil Aviation Organization
IPB	intelligence preparation of the battlefield
IR	infrared
km	kilometer
LHA	landing platform, helicopter assault (US Marine Corps terminology for LPH)
LPH	landing platform helicopter
LSE	landing signal enlisted
MOS	military occupational specialty
MRL	multiple rocket launcher
NATO	North Atlantic Treaty Organization
no	number
OMEGA	VLF (very low frequency) navigation system
OPLAN	operation plan
OPSEC	operations security
pam	pamphlet
PIC	pilot-in-command
PINS	palletized inertial navigation system
POL	petroleum, oils and lubricants
POR	preparation of replacements for overseas movement
PRI-FLY	primary flight control
SA	surface to air
S1	Adjutant (US Army)
S2	Intelligence Officer (US Army)
S3	Operations and Training Officer (US Army)
S4	Supply Officer (US Army)
SAM	surface-to-air missile
SAR	search and rescue
SEALOC	sea lines of communication
SNI	Soviet naval infantry
SP	self-propelled
TOE	tables of organization and equipment
TRADOC	United States Army Training and Doctrine Command
UH	utility helicopter
US	United States (of America)
USN	United States Navy
USSR	Union of Soviet Socialist Republics
VFR	visual flight rules
VMC	visual meteorological conditions
VTOL	vertical takeoff and landing

REFERENCES

REQUIRED PUBLICATIONS

Required publications are sources that users must read in order to understand or to comply with this publication.

Army Regulations (ARs)

95-1 General Provisions and Flight Regulations

525-20 Command, Control, and Communications Countermeasures (C^3CM) Policy

RELATED PUBLICATIONS

Related publications are sources of additional information. They are not required in order to understand this publication.

Field Manuals (FMs)

1-230 Meteorology for Army Aviators

1-302 Aviation Life Support Equipment (ALSE) for Army Aircrews

1-402 Aviator's Recognition Manual

20-151 Aircraft Emergency Procedures Over Water

100-5 (HTF) operations (How to Fight)

101-5 Staff Organization and Operations

TRADOC Pamphlet (TRADOC Pam)

525-8 US Army Aviation Self-Deployment

Available from:

Commander
United States Army Training and Doctrine Command
ATTN: ATDO-S
Fort Monroe, Virginia 23651

Miscellaneous Publications

Memorandum of Understanding Between the Department of the Navy and the Department of the Army on Deck-Landing Training Support, 6 February 1986

Available from:

Commanding Officer
Naval Publications and Forms Center
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INDEX

This index is organized alphabetically by topics and subtopics. Topics and subtopics are identified by page numbers.